

Claims

- [c1] 1. A method for the regeneration of a plant comprising the steps of:
a) providing a plant explant comprising a shoot meristem or primordia;
b) culturing the explant in a media comprising an apical dominance inhibitor in a manner inducing bud or shoot formation from the explant; and
c) rooting the explants containing buds or shoots to produce a plant.
- [c2] 2. The method of claim 1, wherein said media also contains an auxin or a cytokinin.
- [c3] 3. The method of claim 2, wherein said auxin is IAA.
- [c4] 4. The method of claim 2, wherein said cytokinin is BA or ZR.
- [c5] 5. The method of claim 1, wherein said apical dominance inhibitor is dikegulac.
- [c6] 6. The method of claim 5, wherein the dikegulac is a salt.
- [c7] 7. The method of claim 5, wherein the dikegulac is a free acid.
- [c8] 8. The method of claim 5, wherein the dikegulac is Atrimmec®.
- [c9] 9. The method of claim 5, wherein the dikegulac is present at a concentration from about 5 to about 5000 mg/L.
- [c10] 10. The method of claim 9, wherein the dikegulac is present at a concentration from about 10 to about 1000 mg/L.
- [c11] 11. The method of claim 1, wherein said plant is a dicotyledonous plant.
- [c12] 12. The method of claim 11, wherein said plant is a cotton plant.
- [c13] 13. The method of claim 12, wherein said cotton plant is SG747, SG125, HS26, PM2379, DP888, STVL474, DP50, or other commercial variety or elite line.
- [c14] 14. The method of claim 11, wherein said plant is a soybean plant.
- [c15] 15. The method of claim 1, wherein said explant is the zygotic embryo or an explant portion thereof.

- [c16] 16. The method of claim 1, wherein said explant is a node, the cotyledonary node, shoot tip, or an explant portion thereof.
- [c17] 17. The method of claim 1, wherein said explant is an in vitro-produced shoot, tissue culture, shoot culture, or portion thereof.
- [c18] 18. The method of claim 1, wherein the media is MS, MS/B5, GD1, Gamborg's media, WPM, modified LP, DKW, Nitsch and Nitsch media, or Schenk and Hildebrandt media, or modifications therefrom.
- [c19] 19. A method for the regeneration of a transgenic plant comprising the steps of:
a) providing an explant of a plant comprising a shoot meristem or primordia;
b) introducing a recombinant DNA vector into the explant to generate a transformed explant;
c) culturing the transformed explant in a media comprising an apical dominance inhibitor in a manner inducing bud or shoot formation from the transformed explant; and
d) rooting the transformed explants containing buds or shoots to produce a transgenic plant.
- [c20] 20. The method of claim 19, wherein the recombinant DNA vector is transformed into the explant after in vitro bud or shoot formation in culture.
- [c21] 21. A transgenic plant produced from the method of claim 19, and progeny derived therefrom.
- [c22] 22. A method of wounding shoot meristems or primordia for the purpose of *Agrobacterium*-mediated transformation, comprising the steps of
a. adding a suspension of magnetic particles to meristems or primordia to form a mixture; and
b. moving the particle suspension and meristem mixture within a magnetic field.
- [c23] 23. The method of claim 22, wherein the magnetic particle suspension also contains *Agrobacterium*.